

Date: Tuesday, 4/4/2006 1:32:25 PM
 User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : SADDLE FITTING, FWD (OUTBOARD/INBOARD)
Job Number : 26511	
Estimate Number : 10530	
P.O. Number : N/A	Part Number : D2571
This Issue : 4/4/2006 S.O. No. : N/A	Drawing Number : D2571 REV E
Prsht Rev. : NC	Project Number : N/A
First Issue : N/A Type : MACHINED PARTS	Drawing Revision : E
Previous Run : 25996	Material : N/A
Written By : <u>See Comment Below</u>	Due Date : 4/30/2006 Qty: 8 Um: Each
Checked & Approved By : <u>06.04.04</u>	
Comment : Est: 1 02.10.02 Re-format; Change to Dwg Rev. D & incorporated D2572KJ	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	D6101007	7075-T7351 8.25X7.75X2.5
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 8.0000 Each(s)

7075-T7351 8.25X7.75X2.5

Make from D6101-007 billet for D2571

Ensure that grain is along 7.75" length

Batch No: 824893 x7

1325205 x1
5.6

06/05/07

2.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
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Comment: HAAS CNC VERTICAL MACHINING #1

Program Batch No. 326511 Double check by: SD

1-Machine Step No 1 per Folio FA051 and inspect per attached Dimension Sheets

2-Machine Step No 2 per Folio FA051 and inspect per attached Dimension Sheets

3-Machine Step No 3 per Folio FA051 and inspect per attached Dimension Sheets

4-Deburr and remove all machining marks

5-Tumble to remove sharp edges.

EP/5.6

06/05/07

3.0	MILLING CONV.	CONVENTIONAL MILLING MACHINE
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Comment: CONVENTIONAL MILLING MACHINE

Machine keyway as per dwg D2571 & D2572

EP/5.6

06/05/11

4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
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Comment: INSPECT PARTS AS THEY COME OFF MACHINE

EP/5.6

06/05/12

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D2571 PAR #: N/A Fault Category: Prod/Machined Parts NCR: (Yes) No DQA: (Yes) Date: 06/05/17
 QA: N/C Closed: (Yes) Date: 06-05-30

NCR: <u>26511</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
06/05/08	2	INSIDE BORES TOO DEEP by 0.060" chamber on Flange contour to DEEP 0.060" "ZERO" IN "Z" on the second vice was 0.060" operator error.	<i>[Signature]</i>	change the Z zero on second vice Part is scrap. Replace.	EP 06/05/14	<i>[Signature]</i> 06-05-18	<i>[Signature]</i>	<i>[Signature]</i> 06-05-06
06-05-09	2	Dimension "AI" 2.000 ± 0.020 is measured 1.995"	RA per QSI 04A	OKAY, per attached e-mail	ATL 06-05-09	<i>[Signature]</i> 06-05-18	per QSI 04A	<i>[Signature]</i> 06-05-18

NOTE: Date & initial all entries

Date: Tuesday, 4/4/2006 1:32:26 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SADDLE FITTING, FWD (OUTBOARD/INBOARD)

Job Number: 26511

Part Number: D2571

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC8

SECOND CHECK



Comment: SECOND CHECK

MS 06/05/15 8

6.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

a.m 06-05-15

(8)

7.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

a.m 06-05-16

(8)

8.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT

SL 06/05/16

(8)

9.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: SI478

SL 06/05/16

(8)

10.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

SL 06/05/16

(8)

Job Completion



W 06-05-17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order: 26511
Description: Saddle, Fwd Outboard	Part Number: D2571
Inspection Dwg: D2571 Rev. E	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2571 Rev. E and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				1	2	3	4		
A	0.438	0.443	DT8682	0.440	0.440	0.440	0.440		
B	1.745	1.755		1.745	1.748	1.745	1.747		
C	3.495	3.505		3.498	3.496	3.497	3.497		
D	1.745	1.755		1.745	1.748	1.745	1.747		
E	7.990	8.010		8.005	8.003	8.006	8.009		
F	0.490	0.510		0.496	0.494	0.500	0.498		
G	0.257	0.262	DT8683	0.259	0.259	0.259	0.258		
H	0.375	0.380	DT8684	0.376	0.376	0.376	0.376		
I	0.490	0.510		0.496	0.501	0.499	0.497		
J	1.174	1.184		1.177	1.177	1.176	1.176		
K	0.558	0.578		0.561	0.562	0.562	0.560		
L	1.174	1.184		1.177	1.177	1.176	1.176		
M	1.490	1.500		1.494	1.495	1.495	1.497		
N	2.495	2.505		2.495	2.498	2.498	2.497		
O	3.869	3.879		3.873	3.873	3.872	3.872		
P	0.115	0.135		0.120	0.126	0.125	0.124		
Q	0.115	0.135		0.135	0.135	0.135	0.135		
R	0.240	0.260		0.250	0.251	0.250	0.251		
S	0.115	0.135		0.123	0.126	0.126	0.125		
T	0.178	0.198		0.188	0.188	0.188	0.188		
U	2.940	2.980		2.960	2.960	2.960	2.960		
V	0.230	0.250		0.238	0.240	0.243	0.239		
W	0.115	0.135		0.116	0.120	0.122	0.119		
X	0.308	0.313		0.308	0.308	0.308	0.309		
Y	0.760	0.765		0.765	0.765	0.765	0.765		
Z	0.352	0.372		0.361	0.360	0.362	0.364		
AA	0.470	0.530		0.500	0.500	0.500	0.500		
AB	0.615	0.635		0.633	0.630	0.627	0.628		
AC	0.053	0.073		0.063	0.063	0.063	0.063		
AD	0.240	0.260		0.245	0.250	0.245	0.244		
AE	1.375	1.395		1.381	1.385	1.383	1.383		
AF	0.115	0.135		0.135	0.135	0.135	0.135		
AG	0.240	0.280		0.260	0.260	0.260	0.260		
AH	0.240	0.260		0.248	0.253	0.253	0.254		
AI	2.000	2.020		1.995	2.000	2.000	2.000		
AJ	0.023	0.043		0.030	0.030	0.030	0.030		
Accept/Reject									

Measured by: EP/SG
Date: 06/05/11

Audited by: MS
Date: 06/05/11

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.24	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	

DART AEROSPACE LTD	Work Order:	26511
Description: Saddle, Fwd Outboard	Part Number:	D2571
Inspection Dwg: D2571 Rev. E		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2571 Rev. E and record below:

				Recorded Actual Dimensions				By	Date
Dim	Min	Max	Go/No Go Gauge	1	2	3	4		
A	0.438	0.443	DT8682	0.440	0.440	0.440	0.440		
B	1.745	1.755		1.747	1.747	1.747	1.747		
C	3.495	3.505		3.501	3.502	3.498	3.497		
D	1.745	1.755		1.747	1.746	1.750	1.750		
E	7.990	8.010		8.000	8.000	8.001	8.000		
F	0.490	0.510		0.499	0.498	0.508	0.509		
G	0.257	0.262	DT8683	0.258	0.259	0.259	0.259		
H	0.375	0.380	DT8684	0.376	0.376	0.376	0.376		
I	0.490	0.510		0.499	0.498	0.500	0.500		
J	1.174	1.184		1.179	1.178	1.178	1.177		
K	0.558	0.578		0.568	0.569	0.567	0.569		
L	1.174	1.184		1.179	1.179	1.177	1.177		
M	1.490	1.500		1.498	1.499	1.496	1.497		
N	2.495	2.505		2.500	2.502	2.500	2.501		
O	3.869	3.879		3.870	3.872	3.872	3.872		
P	0.115	0.135		0.121	0.124	0.124	0.123		
Q	0.115	0.135		0.135	0.135	0.135	0.135		
R	0.240	0.260		0.249	0.253	0.249	0.248		
S	0.115	0.135		0.125	0.126	0.123	0.124		
T	0.178	0.198		0.188	0.188	0.188	0.188		
U	2.940	2.980		2.960	2.961	2.959	2.960		
V	0.230	0.250		0.236	0.238	0.239	0.238		
W	0.115	0.135		0.120	0.115	0.115	0.115		
X	0.308	0.313		0.310	0.312	0.310	0.310		
Y	0.760	0.765		0.765	0.765	0.765	0.765		
Z	0.352	0.372		0.360	0.364	0.361	0.360		
AA	0.470	0.530		0.500	0.500	0.500	0.500		
AB	0.615	0.635		0.624	0.625	0.624	0.620		
AC	0.053	0.073		0.063	0.063	0.063	0.063		
AD	0.240	0.260		0.244	0.245	0.251	0.247		
AE	1.375	1.395		1.382	1.386	1.381	1.380		
AF	0.115	0.135		0.135	0.135	0.135	0.135		
AG	0.240	0.280		0.260	0.260	0.260	0.260		
AH	0.240	0.260		0.254	0.255	0.249	0.248		
AI	2.000	2.020		2.000	2.003	2.004	2.002		
AJ	0.023	0.043		0.030	0.030	0.030	0.030		
Accept/Reject									






Measured by:	EP / J.G
Date:	06/05/11

Audited by:	MS
Date:	06/05/11




Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.24	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	

05.12.06

MATERIAL: 7075-17351 (QQ-A-250/12) (REF DART SPEC. D6102-001)
FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (REF 4.3.5.1) PER DART
QSI 005 4.3
BREAK ALL SHARP EDGES 0.010 TO 0.020
TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

- | | |
|---|--|
|  | ENGRAVE PART AND BATCH NUMBER IN THIS AREA TO MAX DEPTH OF 0.010 |
|  | ENGRAVE DART LOGO TO MAX DEPTH OF 0.015 WITH MIN. RAD 0.125 |
|  | CHAMFER 0.063" x 45° AROUND THIS SURFACE (TYPICAL 2 PLACES) |
|  | CHAMFER 0.063" x 45° ALL AROUND |
|  | CHAMFER 0.033" x 45° (SEE DETAIL C) |

△E

E	05.07.13	ADD CHAMFER ON RIDGE, NOTE 5
D	02.09.06	ADD RIDGES; TIGHTEN TOLERANCES
C	99.10.22	INCORP. DEO 9123/9079/9102 ADD. DIMENSIONS PER TSR A1177
B	96.12.02	ADD GRAIN DIR., 0.438 WAS 0.425
A	96.09.16	NEW ISSUE
DESIGN	DRAWN BY	 DART AEROSPACE LTD. MARKHAM, ONTARIO, CANADA
DS	PH	
CHECKED	APPROVED	DRAWING NO.
		D2571
DATE		TITLE
05.07.13		OUTER FWD SADDLE

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DART AEROSPACE LTD.

DETAIL C
SCALE 4:3

SECTION A-A

Technical drawing of a mechanical part showing a cross-section with various dimensions and tolerances. The drawing includes the following dimensions and features:

- Overall width: 2.960 ± 0.020
- Top flat width: 0.750
- Top flat height: 0.240 (FLAT ON RIDGE)
- Top flat radius: $R0.50$ (TYP)
- Top flat thickness: 0.250
- Top flat radius: $R0.50$ (TYP)
- Top flat radius: $R0.50$ (TYP)
- Top flat radius: $R0.188$ (TYP AROUND POCKET)
- Top flat radius: $R1.385$
- Top flat radius: 0.125
- Top flat radius: 0.063
- Top flat radius: 0.125
- Top flat radius: 0.250
- Top flat radius: 1.573 (REF)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 26511

NO. 26511

Peter Hum

From: David Shepherd [davids@dartaero.com]
Sent: Tuesday, May 09, 2006 10:51 AM
To: Peter Hum
Subject: Re: d2571 saddle bore out of tolerance

If we cannot machine to within tolerance, then I think we should accept the part as is.

David

----- Original Message -----

From: "Peter Hum" <phum@dartaero.com>
To: "David Shepherd (E-mail)" <davids@dartaero.com>
Cc: "Jason Murdoch (E-mail)" <jmurdoch@dartaero.com>
Sent: Tuesday, May 09, 2006 5:47 AM
Subject: d2571 saddle bore out of tolerance

> David,
>
> The D2571 saddle dimension is 1.995" and the tolerance of this part is
> 2.000(+0.020,-0.000). I've attached a few pictures to show the fit on a
> painted skidtube.
>
> Is this deviation acceptable?
>
> Peter Hum
> Mechanical Designer
>
> DART Aerospace Ltd.
> Email...phum@dartaero.com
> Phone...613-632-3336
> Fax.....613-632-4443
>
>

